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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/395,262	09/14/1999	ARLIN R. JONES	10990268-1	5734

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EXAMINER	
LEE, CHEUKFAN	
ART UNIT	**PAPER NUMBER**
2625	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/395,262	JONES, ARLIN R.	
	Examiner	Art Unit	
	Cheukfan Lee	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13,15,18 and 20* is/are rejected.

7)☒ Claim(s) *14,16,17,19,21 and 22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 13-22 are pending. Claims 13 and 18 are independent. Claims 14-17 depend on claim 13. Claims 19-22 depend on claim 18.

2. The drawings are objected to because of the following:

In Fig. 6, box 314, line 3, "INAGE" should be changed to – IMAGE --.

3. Claim 20 is objected to because of the following:

In claim 20, lines 8-9 recite "at the first substantially constant speed in the second direction". The Examiner is not sure if the intended claim limitation is "at the second substantially constant speed in the second direction". Please refer to lines 6-7 of claim 18 upon which claim 20 dependent.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 13, 15, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumashiro (U.S. Patent No. 5,864,408) in view of Tom et al. (U.S. Patent No. 6,369,918). Kumashiro was cited in the Office Action mailed April 5, 2006, and Tom et al. was cited in the Information Disclosure Statement filed September 28, 2006.

Regarding claim 13, Kumashiro discloses a scanning device and a system having a scanning device comprising a moving mechanism (rollers 12, 15 and 16, and ADF motor 32) to selectively move an object (original document) at an inherent substantially constant speed during scanning in the sheet through scanning mode (stationary reading mode in which the contact image sensor 21 is stationary) under control of the CPU (35), a scanning mechanism (moving device drive motor 33, contact image sensor 21, and sensor carriage) including an optical sensor (contact image sensor 21), with the scanning mechanism to selectively move the optical sensor (21) at a second inherent substantially constant speed during scanning in the moving reading mode in which the contact image sensor (21) is moved under control of the CPU (35), and the controller (CPU 35) coupled to the moving mechanism (rollers 12, 15 and 16, and ADF motor 32) and the scanning mechanism (drive motor 33, contact image sensor 21 and sensor carriage) (Figs. 1 and 2, col. 5, line 42 - col. 6, line 26, col. 6, line 27 - col. 7, line 45).

Kumashiro does not disclose that the controller (CPU 35) is configured to replace first data from measurement of reflected light from a first section of the object, corresponding to a deceleration distance of the object, during deceleration of the object, with second data from measurement of reflected light from the first section during relative movement between the first section and the optical sensor at the second substantially constant speed.

Tom et al. discloses a system (an apparatus and method) to reduce distortion of scanner restarts. In the detailed exemplary embodiments corresponding to prior art (Figs. 1 and 2) and the invention of Tom et al. (Fig. 4), the scanner is of the type in which a motor moves the image sensor "vertically down the image", i.e., the motor moves the image sensor in the subscanning direction of the scanner. Tom et al. also states that "Some scanners move the image instead of the sensor ..., but the principles are the same." (for prior art scanners), and "The scanner may instead be configured to move the image instead of the sensor. (These choices are not critical to the invention.)" and "The stepper motor may ... move the image" (for the invention of Tom et al.) (col. 1, lines 40-43, and col. 6, lines 20-25 and col. 4, lines 60-62, respectively), in describing how to reduce or eliminate distortion caused by "continued forward movement" after a pause signal is issued (col. 2, lines 40-42, for example).

Tom et al. discloses a controller configured to replace first data from measurement of reflected light from a first section of the object (original, image), corresponding to a distance traveled by the image sensor in the "continued forward movement" (which distance corresponds to the claimed deceleration distance of the object to be discussed below), with second data from measurement of reflected light from the first section during relative movement between the first section and the optical sensor (the movement of the image sensor) at the (second) substantially constant speed in the region 38 (Fig. 1).

Because of the above quoted statements of Tom et al., that the principle is the same when the original is moved instead of the image sensor, using the description of

the exemplar embodiments (Figs. 1 and 2, col. 1, lines 40-45, col. 1, line 60 to col. 2, line 67, and Fig. 4, col. 6, lines 5-62), one of ordinary skill in the art would have realized that in the case the original is moved instead of the sensor, a deceleration distance of the object or original is equivalent to the "continued forward movement" after the pause signal is issued (col. 2, lines 40-42), and the second data to replace the first data is data obtained from rescanning/scanning the first section of the original when the original is accelerated to the substantially constant speed, which occurs after the first section is moved backward. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the controller of Tome et al. using the same principle of Tome et al. as described in the exemplary embodiments, in order to provide a controller configured to replace the first data from measurement of reflected light from the first section of the object or original, corresponding to a deceleration distance of the object, during deceleration of the object or original, with the second data from measurement of reflected light from the first section during relative movement between the first section and the optical sensor (image sensor) at the second substantially constant speed as claimed, for the type of scanner, or an operation mode of the scanner, in which the original is moved instead of the image sensor.

Based on the reason of obviousness given above with respect to the controller, one of ordinary skill in the art would have recognized the benefit of combining the configuration(s) or feature of the controller of Kumashiro discussed above with the configuration or feature of Tom et al. discussed above, such that the controller is configured not only to control the moving mechanism and the scanning mechanism as

discussed above but also to replace the first data with the second data as claimed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a controller configured to control the moving mechanism and the scanning mechanism and to replace the first data with the second data in order to reduce or eliminate image distortion.

Claim 18 recites limitations similar to those of claim 13, except for the exchanged associating of the terms "first substantially constant speed" and "second substantially constant speed". In claim 18, the "first substantially constant speed" is associated with the "scanning mechanism", and the 'second substantially constant speed" is associated with the "moving mechanism", instead of wise versa as is in claim 13. Claim 18 is rejected for the reason given for claim 13. In addition, Kumashiro's scanning device generates a digital representation of the image on the original document (col. 6, lines 27-36), which meets "digital representation of an image on media" of lines 1-2 of claim 18.

Regarding claim 15, the claim recites "the controller includes a configuration to actuate the moving mechanism to move the object in a first direction opposite a second direction that the object moves during scanning for a first distance substantially equal to a sum an acceleration distance of the object and the deceleration of the object". The moving of the object in a first direction opposite a second direction that the object moves during scanning corresponds to the feature in Tom et al., i.e., the moving of the

sensor "backward" in region 30 (Fig. 1). The total distance moved in region 30 is understood to include not only the distance corresponding to the "continued forward movement" of the sensor but also the distance during acceleration of the sensor to be performed after resuming the reading operation (col. 2, lines 38-59). Thus, based on the discussion and reason of obviousness for claim 13 with respect to the case where the original is moved instead of the image sensor, it would have been obvious to one of ordinary skill in the art that one of the configurations of the controller of Kumashiro in view of Tom et al. discussed for claim 13 actuates the moving mechanism to move the object in a first direction opposite the second direction that the object or original moves during scanning for a first distance substantially equal to a sum an acceleration distance of the original and the deceleration distance of the original as claimed.

Claim 15 further recites "the controller includes a configuration to actuate the moving mechanism to move the first section of the object past the optical sensor at the first substantially constant speed in the second direction". This claimed configuration corresponds to the configuration of Tom et al. functioning in the region 38 (Fig. 1), in which the first section of the original that was moved in the "continued forward movement" of the sensor gets read or scanned (col. 2, lines 57-59 and 38-42). Thus, based on the discussion and reason of obviousness for claim 13 with respect to the case where the original is moved instead of the image sensor, it would have been obvious to one of ordinary skill in the art that one of the configurations of the controller of Kumashiro in view of Tom et al. discussed for claim 13 actuates the moving mechanism to move the first section of object past the image sensor at the first

substantially constant speed in the second direction that the object moves during scanning as claimed.

With regard to a further limitation of claim 15 "the controller includes a configuration to cause the measurement of the reflected light used to generate the second data from the first section with the optical sensor during the relative movement between the first section and the optical sensor at the first substantially constant speed", the claimed configuration corresponds to the configuration of Tom et al. functioning in the region 38 (Fig. 1), in which the second data is generated from reading the first section of the original by the sensor at the substantially constant speed of the optical sensor, which is after the acceleration period of the sensor. Thus, based on the discussion and reason of obviousness for claim 13 with respect to the case where the original is moved instead of the image sensor, it would have been obvious to one of ordinary skill in the art that one of the configurations of the controller of Kumashiro in view of Tom et al. discussed for claim 13 causes the measurement of the reflected light used to generate the second data from the first section with the optical sensor during the relative movement between the first section and the optical sensor (the movement of the object or original) at the first substantially constant speed as claimed.

Claim 20 claims limitations similar to those of claim 15. Please refer to the discussion for claim 15.

6. Claims 14, 16, 17, 19, 21, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

Claim 14 would be allowable because the closest prior art reference Tom et al. (U.S. Patent No. 6,369,918) does not disclose a configuration of the controller as claimed, a configuration to actuate the scanning mechanism to move the optical sensor or image sensor in a first direction the object or original moves during the scanning for a first distance substantially equal to a sum of the deceleration distance of the object or original and an acceleration distance of the object, and a configuration to actuate the moving mechanism to move the first section of the object or original past the optical sensor or image sensor at the first substantially constant speed in the first direction, in combination with other limitations of claim 14. Tom et al. does not disclose both moving the image sensor and moving the original, in reducing or eliminating image distortion due to deceleration and acceleration. The case of Tom et al., where the original is moved instead of the image sensor, suggested in the above quoted statements, and the case where the image sensor is moved as described in the exemplary embodiments of Tom et al., do not seem to coexist in the scanning device or system for obtaining image data that is not distorted; it is either one case or the other, not both.

Claim 16 would be allowable for a reason similar to that given for claim 14. Tom et al. does not teach both moving the sensor and moving the original, in reducing or

eliminating image distortion due to deceleration and acceleration. Therefore, Tom et al. does not disclose a configuration to actuate the scanning mechanism to move the optical sensor in a first direction, opposite a second direction the object moves during scanning, for a first distance substantially equal to a sum of an acceleration distance of the optical sensor and an acceleration distance of the object, in combination with a configuration to actuate the scanning mechanism to move the optical sensor in the second direction for a second distance substantially equal to a sum of the acceleration distance of the object and the deceleration distance of the object at the second substantially constant speed, and other limitations of claim 16.

Claim 17 would be allowable for a reason similar to that given for claim 14. Tome does not teach both moving the sensor and moving the original, in reducing or eliminating image distortion due to acceleration and deceleration. Please refer to the reason given for claim 14.

Claim 19 claims limitations similar to those of claim 14. Similar to the reason given for claims 14, claim 19 is allowable because the closest prior art Tom et al. (U.S. Patent No. 6,369,918) does not disclose both moving the image sensor and moving the original or media, in reducing or eliminating image distortion due to deceleration and acceleration. The case of Tom et al., where the original is moved instead of the image sensor, suggested in the above quoted statements, and the case where the image sensor is moved as described in the exemplary embodiments of Tom et al., do not

seem to coexist in the scanning device or system for obtaining image data that is not distorted; it is either one case or the other, not both.

For claims 21 and 22, please see reasons given for claims 16 and 17, respectively, for claiming limitations similar to those of claims 16 and 17, respectively.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kageyama et al. (U.S. Patent No. 6,934,058), "Image reading apparatus and method with reading suspension and resumption based on memory characteristics", scan unit moves during scanning

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cheukfan Lee
January 1, 2007